Lesson 1

# What are the building blocks of life?

*How are a dandelion and a cat alike? Both are living things. They are both made from the building blocks of life.*

## What Cells Are

A cell is the building block of life. A **cell** is the smallest unit of a living thing that can perform all life processes. All living things are made of cells.

Some living things are made up of just one cell. Most living things, like plants and animals, are many-celled. Every part of a cat—from its muscles to its blood—is made of thousands, millions, even billions of cells.

**A microscope helps you see cells.**

Many cells have a particular role. Some cells help the living thing get energy it uses to grow, develop, and reproduce. Other cells help it get rid of what it doesn't need. Others help it move or react to its environment. Still other cells may protect the living thing or help it stay healthy. All cells come only from other living cells.

Scientists use microscopes to study cells. A microscope is a tool that makes objects seem larger than they really are. Most cells are very small and hard to see. By using a microscope, scientists are able to look at a cell and see details that help them learn about the cell.

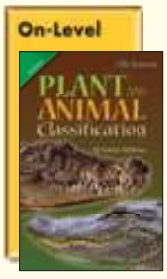
1. Checkpoint Why are cells considered the building blocks of living things?
2. Math in Science In 1675, a Dutch scientist named Anton van Leeuwenhoek (LAY vehn hook) used a simple microscope to observe cork cells. How many years ago did van Leeuwenhoek observe these cells? Use mental math.



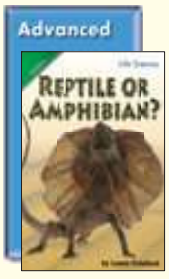
## Leveled Readers

Begin to use the Chapter 1 Leveled Readers with appropriate reading groups at this time.


*Classifying Plants and Animals* has the same content as Chapter 1, but it is written at a less difficult reading level.




*Plant and Animal Classification* has the same concepts as Chapter 1 and is written at grade level.




*Reptile or Amphibian?* is above grade level and enriches the chapter with additional examples and extended ideas.

## Guide Comprehension

Ask students the following scaffolded questions to assess understanding.

### Scaffolded Questions

**1. Recall** ***What is the smallest unit of a living thing?*** A cell

**2. Draw Conclusions** ***How did the microscope help scientists learn that cells are the basic units of life?*** The microscope allowed scientists to see cells for the first time.

**3. Infer** ***How do you know that a cell is a living thing?*** It gets and uses energy, and it grows and reacts to its environment.

## Extend Vocabulary

Many words have multiple meanings. For example, the word **cell** may mean:

- smallest unit of a living thing
- a small room
- a compartment (such as in a honeycomb or battery)
- a small section of a geographic area (such as in a cellular phone system)

Discuss with students how the definitions are similar. (Each kind of cell refers to a small unit associated with a group of similar units.)

## Diagnostic Check

**If...** students have difficulty understanding the small size of a cell,

**then...** recall how the first examination of cells came only after the invention of the microscope and reread the paragraph on page 6 that describes how more than 10,000 cells could fit on a period.

1. Checkpoint Cells are considered the building blocks of living things because they can carry out the basic processes of life. Cells can get and use energy, grow and develop, get rid of waste, reproduce, and react to the environment.
2. Math in Science About 330 years ago